

# EXHIBIT B

Part 1 of 6

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF MICHIGAN**

**FORD MOTOR COMPANY**, a Delaware corporation, and **FORD GLOBAL TECHNOLOGIES, LLC**, a Delaware Limited Liability Company,

Plaintiffs/Counter-Defendants,

V.

**INTERMOTIVE, INC.**, a California corporation, and **GREGORY E. SCHAFFER**, an individual,

## Defendants/Counter-Plaintiffs.

Civil Action No.: 17-cv-11584  
Judge Terrence G. Berg  
Magistrate Judge Anthony P. Patti

**DECLARATION OF KRISTINA BLACK IN SUPPORT OF**  
**INTERMOTIVE’S MOTION FOR INCREASED PROFIT AWARD UNDER**  
**THE LANHAM ACT**

I, Kristina Black, do declare under penalty of perjury:

1. Attached to this Declaration as **Exhibit 1** is a true and correct copy of the following draft trial transcripts:

Trial Transcript dated October 27, 2023, pp. 104-105, and 148

Trial Transcript dated October 30, 2023, pp. 119-120 and 142-144

Trial Transcript dated October 31, 2023, pp. 18-19 and 32-37

2. Attached to this Declaration as **Exhibit 2** is a true and correct copy of the following admitted trial exhibits: 5, 21, 24, 26, 32, 60, 61, 82, 111, 121, 124, 225, 254, 303, 308, 310, 312, 313, 315, 316, 317, 319, 321, 394, 945.2

I declare under penalty of perjury that the foregoing is true and corrected.

Executed on November 28, 2023

/s/ Kristina Black

Kristina Black

# EXHIBIT 1



1 UNITED STATES DISTRICT COURT  
2 EASTERN DISTRICT OF MICHIGAN  
3 SOUTHERN DIVISION

4 FORD MOTOR COMPANY, a  
5 Delaware corporation, and FORD  
6 GLOBAL TECHNOLOGIES, LLC, a  
7 Delaware Limited Liability  
8 Company,

9 Plaintiffs/Counter-Defendants

10 vs.

Case No. 17-11584  
Hon. Terrence G. Berg

11 INTERMOTIVE, INC., a California  
12 corporation, and GREGORY E.  
13 SCHAFER, an individual,

14 Defendants/Counter-Plaintiffs  
15 \_\_\_\_\_ /

16 **JURY TRIAL: VOLUME 8**

17 BEFORE THE HONORABLE TERRENCE G. BERG  
18 United States District Judge  
19 Theodore Levin United States Courthouse  
20 231 West Lafayette Boulevard  
21 Detroit, Michigan 48226  
22 Friday, October 27, 2023

23 **APPEARANCES:**

24 For the Plaintiff  
25 Ford Motor Company,  
et al:

JOHN S. LeROY  
MARC LORELLI  
Brooks Kushman  
1000 Town Center  
22nd Floor  
Southfield, Michigan 48075  
248-358-4400

Also Present:

ANDREW PRIDE, Litigation Counsel  
Ford Motor Company

(Appearances continued next page)

1 convention center plus the Indiana where the Colts play, the  
2 field house is filled with fire trucks and ambulances.

3 Q. And does InterMotive advertise its Upfitter Interface  
4 Module at that show?

5 A. Yes.

6 Q. How about the national association of fleet  
7 administrators, are you familiar with that particular trade  
8 show?

9 A. Yes. I've done that show many times.

10 Q. Okay. And is that a trade show in which InterMotive it is  
11 and promotes its Upfitter Interface Module?

12 A. Yes.

13 Q. And do you recall the -- you know, how often InterMotive  
14 attends that trade show and promotes its Upfitter Interface  
15 Module?

16 A. We've attended most years since early 2010s that we may  
17 not have attended every single year. Obviously COVID shut down  
18 a lot of shows for, you know, one to two years.

19 Q. Are you aware of any instances of actual confusion between  
20 the InterMotive Upfitter Interface Module and Ford's Upfitter  
21 Interface Module?

22 A. Yes, I am.

23 Q. Okay. And what instances of actual confusion have you  
24 personally observed?

25 A. So employee at Jerr-Dan, they make tow trucks. They were

1 confused -- actually they congratulated me on selling Ford our  
2 Upfitter Interface Module. They thought it was ours. At the  
3 ICUEE show we had multiple people come up and ask -- are you  
4 selling InterMotive's Upfitter Interface Module or are they  
5 selling yours so there was definite confusion in the  
6 marketplace between the names.

7 Q. This instance with the Jerr-Dan employee, do you recall  
8 when that was?

9 A. That was 2016.

10 Q. And the ICUEE, do you recall when that was?

11 A. I believe -- since ICUEE is only every other year, I  
12 believe that would have been 2017.

13 Q. Have you come across or you noticed any Ford advertising  
14 in which it uses your Upfitter Interface Module brand?

15 A. Yes.

16 Q. Can we pull up Exhibit 111 please. Do you recognize this  
17 particular document?

18 A. Yes, I do.

19 Q. What do you recognize it as?

20 A. Ford Motor Company using my brand, the Upfitter Interface  
21 Module to sell more trucks.

22 Q. And you see Upfitter Interface Module right there,  
23 correct?

24 A. Yes, I do.

25 Q. Why do you say they're using your brand?

1 described any confusion or -- or kind of mix-up between Ford  
2 using the Upfitter Interface Module and InterMotive using the  
3 Upfitter Interface Module?

4 A. Yes. So just actually couple of weeks ago, we just had a  
5 customer who was using -- going to be using ours then decided  
6 to use Ford's solution. Not making a decision 'cuz they  
7 weren't sure really that -- was ours -- was ours -- was  
8 InterMotive's Ford's, was Ford's InterMotive but they decided  
9 to, you know, switch and use the Ford or the version purchase  
10 from Ford Motor Company. So but they were confused as to is  
11 this you, not you, but I'd rather get it from Ford. Even if it  
12 is you. So that does -- that has happened and as I mentioned  
13 earlier at the -- in 2012, when we -- when Ford stood up there  
14 and said this is the way we want to you connect to the CAN bus,  
15 I got pats on the back. People saying congratulations. They  
16 were thinking that's great. Then when Ford came out with  
17 theirs in 2016, there were people saying I'm confused. Are you  
18 now selling Ford's, are they selling yours.

19 Q. So based on your understanding and your experience in the  
20 marketplace and the confusion, do you have an understanding  
21 that any of Ford's customers may have bought Ford vehicles  
22 because of it's using the brand Upfitter Interface Module?

23 A. Yes.

24 MR. LORELLI: Objection foundation, Your Honor.  
25 Speculation.

1 UNITED STATES DISTRICT COURT  
2 EASTERN DISTRICT OF MICHIGAN  
3 SOUTHERN DIVISION

3 FORD MOTOR COMPANY, a  
4 Delaware corporation, and FORD  
5 GLOBAL TECHNOLOGIES, LLC, a  
6 Delaware Limited Liability  
7 Company,

8 Plaintiffs/Counter-Defendants

9 vs.

Case No. 17-11584  
Hon. Terrence G. Berg

10 INTERMOTIVE, INC., a California  
11 corporation, and GREGORY E.  
12 SCHAFER, an individual,

13 Defendants/Counter-Plaintiffs  
14 /

15 **JURY TRIAL: VOLUME 9**

16 BEFORE THE HONORABLE TERRENCE G. BERG  
17 United States District Judge  
18 Theodore Levin United States Courthouse  
19 231 West Lafayette Boulevard  
20 Detroit, Michigan 48226  
21 Monday, October 30, 2023

22 **APPEARANCES:**

23 For the Plaintiff  
24 Ford Motor Company,  
25 et al:

JOHN S. LeROY  
MARC LORELLI  
Brooks Kushman  
1000 Town Center  
22nd Floor  
Southfield, Michigan 48075  
248-358-4400

JUSTIN WEINER  
Bush Seyferth PLLC  
100 W. Big Beaver Road  
Suite 400  
Troy, Michigan 48084  
248-822-7851

(Appearances continued next page)

1 advisory. And I think that that is likely what I will do. I  
2 haven't totally decided that, but because I think it's likely I  
3 will do that, I don't think that there's a big concern about  
4 potential bias by the jury because I think ultimately this  
5 question of disgorgement is an equitable remedy that the Court  
6 will need to decide, but I would be taking the jury's verdict  
7 as an advisory verdict. And then finally, the fact is that the  
8 defendant InterMotive is not actually seeing this whole amount  
9 anyway so they're seeking something less than that amount and  
10 so it's not as significant as if they were seeking the whole  
11 amount. So that's my ruling with respect to bias.

12 Now, the second reason is a more significant reason  
13 and that relates to Ford's argument that InterMotive has not  
14 shown sufficiently that the trade secret itself, the  
15 programmable inputs being used in a device like the Upfitter  
16 Interface Module, actually drove the decision to purchase  
17 vehicles. That's part of what they would have to show and then  
18 the second part they would have to show is some factual basis  
19 of how many vehicles or what percentage of vehicles of Ford's  
20 sales were driven by this preference or consumer decision to  
21 purchase the vehicles based on the presence of the programmable  
22 inputs and Ford argues that this is a -- is a second problem  
23 with the evidence here. So I think that these are significant  
24 objections. And I don't mean to minimize them. I think  
25 they're significant. I think that this first one regarding

1 whether or not programmable inputs was a driver of sales is one  
2 that there is some evidence in support, but not a great deal of  
3 evidence and as to the second issue, as to whether or not  
4 there's some number of vehicles or percentage of vehicles where  
5 those vehicles were sold because of the presence of the trade  
6 secret, there's also some evidence of that which is the  
7 testimony of Mr. Ellison regarding his experience with  
8 consumers where he said specifically that the trade secret, the  
9 use of the programmable inputs in the device comes up some  
10 20 percent of the time in his talking to customers about their  
11 decisions in buying vehicles in the upfit industry. Again, I  
12 call this some evidence. It's not very much evidence.

13 On the whole I think this. While this question of  
14 the -- especially the question of how many vehicles and the  
15 percentage of vehicles is something that InterMotive should  
16 have presented evidence on and should have gone into in  
17 discovery a long time ago and chose not to for whatever reason,  
18 I can't speculate as to the reason why they didn't, and -- but  
19 the question now is whether or not evidence of Ford's profits  
20 would be relevant to a determination in the case where there is  
21 some evidence that consumer decisions were made in part because  
22 of programmable inputs and that there is some evidence that  
23 those decisions amounted to in the area of some 20 percent.  
24 And so I'm not going to exclude Mr. Robinson completely from  
25 testifying about profits. I'm not going to allow him to bring

1 within their vehicle. It's a Ford Super Duty 350 or something.  
2 But this in the marketing world is called ingredient branding  
3 or component branding and we see it all the time. Like even  
4 in -- in the automotive industry when you're looking at a car,  
5 it might say, well, this has a Bose audio system so, you know,  
6 if you're looking at that you're like wow I've heard of Bose  
7 that's good stuff. But it happens -- actually about a week ago  
8 I noticed that my toothpaste which is Crest, it says contains  
9 Scope mouthwash. So, you know, that -- that gone is like an  
10 example of how the -- a manufacturer or seller of a product  
11 puts these other names that people might know to enhance their  
12 own product. So that's a similar situation to what exists  
13 here.

14 Q. So are you done talking about this one?

15 A. Yeah.

16 Q. Should we move on to slide 12? So can we blow that up a  
17 little bit just so they can see it. Maybe a little bit smaller  
18 so we can see the whole thing. But is this the result of your  
19 analysis as to the measures of Ford's unjust enrichment?

20 A. Yeah, related to the UIM product itself. Okay. So the  
21 UIM product is incorporated in a vehicle. So this reflects how  
22 many units of these modules, UIM modules did Ford sell. So the  
23 total that I have there which you probably can't see, I can't  
24 even see on this screen, 90,488. Okay. Now, that's within the  
25 North American market. That's -- that relates to how many



1 products were made in the United States and -- and maybe  
2 exported to Canada or to some other country, but they were all  
3 made as I recall like Super Duty is made, there's a truck plant  
4 in Ohio and I think one in Kentucky and -- so that's why this  
5 is restricted to the North American market. Do you want me to  
6 explain?

7 Q. Just -- so just to be clear, you're saying -- woop. It  
8 went away. So just to be clear, you're saying that Ford has  
9 sold over 90,000 units of the Upfitter Interface Module,  
10 correct?

11 A. Yes.

12 Q. Okay.

13 A. And just to be clear it's within the United States, Canada  
14 or exported out of the United States to another country.

15 Q. Okay. So then what are these potential economic remedies  
16 you're referring to here?

17 A. Well, the -- the first one that I have if you remember  
18 back to the slide where I said what are the potential economic  
19 remedies for trademark infringement and unfair competition?  
20 It's the sales revenue of the defendant. So that line that  
21 says Ford's UIM sales revenue in North America, totals  
22 \$23,157,489.

23 Q. Okay. Then what's the other remedy you're pointing to at  
24 the bottom there?

25 A. Well, the other remedy if we think back to that slide that

1 says who has the burden, costs are supposed to be the burden of  
2 Ford. Ford did produce some cost information, but I'm more  
3 than a little challenged by the information. It's at an  
4 extremely high level within Ford and it makes it impossible to  
5 do any real cost analysis. We're talking about a module that  
6 is purchased from Magna, manufactured at Magna. It's sent to  
7 Ford in some fashion, whether it's sent directly to the various  
8 manufacturing plants and then it gets incorporated into a  
9 vehicle. So you could easily trace the activities associated  
10 with getting that module from Magna to Ford and then into a  
11 vehicle and then if you have those activities identified, you  
12 can assign costs to those activities. That -- that type of  
13 information was not supplied. It was done at a very high level  
14 like here is our condensed Ford Super Duty vehicle profit line  
15 statement. And it is at such a high level, you can't do any  
16 accurate cost analysis with it. So what I did was very  
17 conservative assumptions based on that information and I  
18 determined how much profit that Ford made in association with  
19 these UIM modules. And that totals \$15,913,350.

20 Q. Sir, are you ready to look at the next slide?

21 A. Yes.

22 Q. So let's take a look at the next slide and what does this  
23 show some?

24 A. Well, I mean this is what I'm talking about when we talk  
25 about very -- a very high level vehicle line income statement.

1 UNITED STATES DISTRICT COURT  
2 EASTERN DISTRICT OF MICHIGAN  
3 SOUTHERN DIVISION

4 FORD MOTOR COMPANY, a  
5 Delaware corporation, and FORD  
6 GLOBAL TECHNOLOGIES, LLC, a  
7 Delaware Limited Liability  
8 Company,

9 Plaintiffs/Counter-Defendants

10 vs.

Case No. 17-11584  
Hon. Terrence G. Berg

11 INTERMOTIVE, INC., a California  
12 corporation, and GREGORY E.  
13 SCHAFER, an individual,

14 Defendants/Counter-Plaintiffs  
15 \_\_\_\_\_ /

16 **JURY TRIAL: VOLUME 10**

17 BEFORE THE HONORABLE TERRENCE G. BERG  
18 United States District Judge  
19 Theodore Levin United States Courthouse  
20 231 West Lafayette Boulevard  
21 Detroit, Michigan 48226  
22 Tuesday, October 31, 2023

23 **APPEARANCES:**

24 For the Plaintiff  
25 Ford Motor Company,  
et al:

JOHN S. LeROY  
MARC LORELLI  
Brooks Kushman  
1000 Town Center  
22nd Floor  
Southfield, Michigan 48075  
248-358-4400

JUSTIN WEINER  
Bush Seyferth PLLC  
100 W. Big Beaver Road  
Suite 400  
Troy, Michigan 48084  
248-822-7851

(Appearances continued next page)

1 MR. GROVE: There's a brief stipulation of facts that  
2 the parties have agreed to. First, the parties to this case  
3 are Ford Motor Company and Ford Global Technologies LLC  
4 collectively referred to as Ford. And InterMotive Inc. and  
5 Gregory Schafer collectively referred to as InterMotive.

6 Second, Ford is an automobile manufacturer with its  
7 principal place of business in Dearborn Michigan.

8 Third, InterMotive is a supplier of vehicle  
9 electronic equipment including upfitter modules with its  
10 principal place of business in Auburn, California.

11 Fourth, vehicle upfitting involves customization of a  
12 vehicle for a wide variety of applications including publish  
13 safety, emergency response, and specialized transportation  
14 applications. A variety of types of equipment may be installed  
15 on an upfit vehicle including light bars, sirens, generators,  
16 aerial lifts and the like.

17 Fifth, on October 29th, 2011, Ford and InterMotive  
18 entered into a Confidential Disclosure Agreement.

19 Six, Ford registered its stylized Ford trademark,  
20 U.S. registration No. 74,530. Ford with the circle R  
21 trademark. U.S. registration number 643185 and the Ford oval  
22 trademark, U.S. registration number 1399080 on the Principal  
23 Register in 1909, 1957 and 1986 respectively. All of these  
24 trademarks are incontestable. From model year 2017 to the  
25 present, Ford has sold 92,365 vehicles worldwide with the Ford

1 Upfitter Interface Module installed on the vehicle. Eighth and  
2 finally, the average entire vehicle profit for the Ford  
3 worldwide vehicles having the Ford Upfitter Interface Module  
4 installed is \$8,790. So with that stipulation, the defendants  
5 counter-claimants rest their case.

6 THE COURT: Thank you very much Mr. Grove. So,  
7 ladies and gentlemen, the other side gets an opportunity to  
8 present any rebuttal evidence if they wish and so I'll turn to  
9 Mr. Lorelli. Do you have any evidence you wish to present.

10 MR. LORELLI: We do, Your Honor, but I did want to  
11 make note of one thing I believe for paragraph 5 of the  
12 stipulation of the facts Mr. Grove misspoke. It's on November,  
13 not October, but on November 29th, 2011 Ford and InterMotive  
14 entered into a Confidential Disclosure Agreement.

15 THE COURT: Do you agree with that, sir, Mr. Grove.

16 MR. GROVE: I do.

17 THE COURT: Very good. I think the jury might  
18 remember that themselves but let's go ahead.

19 MR. LORELLI: Your Honor, Ford calls Ms. Sara Rinke.

20 THE COURT: Step Ford Ms. Rinke. Raise your right  
21 hand.

22 S A R A R I N K E

23 was called as a witness herein, and after being first duly  
24 sworn to tell the truth and nothing but the truth, testified on  
25 his oath as follows:

1 relevant public and there are surveys country all over the  
2 country who know how to find out what relevant market is  
3 because not every product would have the same market and then a  
4 survey would be done to determine what the level of confusion  
5 is of the purchasing public.

6 Q. And what would you do with that level of confusion if you  
7 were trying to determine unjust enrichment versus -- well, what  
8 would you do with that survey?

9 A. The survey becomes relevant because what -- when you're  
10 thinking about unjust enrichment, it's not enrichment. It's  
11 unjust enrichment. So it's a way to identify those individuals  
12 or those conditions that purchased a product thinking it was  
13 provided by another company because the same name was used and  
14 so that percentage that you can derive from a survey, is that  
15 where that would be applicable.

16 Q. Did InterMotive conduct such a survey in this case?

17 A. They did not.

18 Q. Did InterMotive -- you were here for two weeks. Did  
19 InterMotive present evidence of confusion?

20 A. You heard some examples of that from Mr. Schafer and Mr.  
21 Ellison where they describe there was some, you know, confusion  
22 at different -- some of the different trade shows or things  
23 like that but it was it was anecdotal. There wasn't a name of  
24 a company or a individual or a business or any data that could  
25 be used from those examples to -- to do some further analysis

1 with.

2 Q. Because you didn't have details or surveys, what did you  
3 do with regards to analyzing what portion of Ford's profits  
4 would be enrichment versus unjust enrichment?

5 A. So then I went back to the trademark application that had  
6 been filed by InterMotive related to the Upfitter Interface  
7 Module name and in that trademark -- trademark application  
8 there was some -- there was some information that I considered  
9 to determine or estimate what could have been confusion.

10 Q. Was that from Mr. Ellison's declaration?

11 A. It was.

12 Q. And we've talked about -- you've seen this paragraph  
13 talked about at length during this trial, right?

14 A. I have.

15 Q. So let's -- before we get to the cross-out, did you study  
16 InterMotive's records with regards to the support of the  
17 alleged support for the statement of Mr. Ellison?

18 A. I did.

19 Q. So he says that they had 225 customers but this was in  
20 2017 so it wasn't in the relevant period. What -- what did  
21 your study of InterMotive's records tell you?

22 A. There was a much smaller number of customers. The 225  
23 is -- it's -- it's additive. So if I have a customer in 2015  
24 and 2016 it's the same customer and so what that is, it's not  
25 unique. It's not unique customers. It was 225 total and then

1 the other information we saw, of course, was from Mr. Ellison  
2 as well as there was an email that was provided that showed  
3 that in 2016 I believe, the number of customers was 63. And so  
4 that's what I did. I used.

5 Q. We'll get to the 63 in a second but I want to talk  
6 about -- did you also determine whether InterMotive had total  
7 sales in excess of \$2.8 million for the Upfitter Interface  
8 Module when Mr. Ellison signed this declaration?

9 A. I think you have to be clear. What do you mean by  
10 Upfitter Interface Module? So.

11 Q. Okay. Go ahead?

12 A. InterMotive's data, the sales data that gets to  
13 2.8 million and Mr. Ellison explained this, it's not just  
14 this -- make sure, is this the UIM. This is the UIM. It's --  
15 it's not just this. So what they call an Upfitter Interface  
16 Module to the Trademark Office included the PRPC product that  
17 we've been hearing about and it included the aftermarket  
18 interface module. There was that name AIM and so it was  
19 broader than just -- the Upfitter Interface Module products was  
20 broader than just this.

21 Q. So did you determine what the sales were for just the  
22 Upfitter Interface Module product?

23 A. For the period of time that InterMotive provided the  
24 detailed data, it was about \$300,000.

25 Q. Not 2.8 million?



1 A. No.

2 Q. Okay. So why don't you tell us what's on the bottom of  
3 this page?

4 A. So the bottom -- the bottom of the page and its struck  
5 out, there was a number under there of 11 percent. The reason  
6 that's -- that 11 percent was derived from the 225 and so it  
7 was -- there's about 2,000 attendees at the NTEA and so it's  
8 taking 225 divided by 2,000 was 11 percent and so what I did is  
9 I took the 63 that's the corrected number and you divide that  
10 by 2000, that number becomes -- it's not the 11 percent, it's 3  
11 percent.

12 Q. So you have 11 percent and 3 percent. Why didn't you tell  
13 us why these numbers are important to your analysis?

14 A. They're important to the analysis because it's looking at  
15 what was the reach, we're talking about the period prior to  
16 2016. What was the reach of InterMotive and its -- you know,  
17 the name Upfitter Interface Module. And so looking at their  
18 own, you know, the volume of customers, the people who have  
19 actually been purchasing the product, it's looking at how much  
20 -- you know, how many customers in this relevant market had  
21 actually purchased, you know, an upfitter -- what they're  
22 calling the Upfitter Interface Module from InterMotive.

23 Q. And as a damages financial expert, what did you do with  
24 these numbers?

25 A. So you're going to see two different numbers on there.

1 The first one we're starting again with the total number of  
2 units but now we have a different unit number to talk about.  
3 What I -- this is the volume of Ford's sales of the UIM in the  
4 United States. So this is -- this is why it's labeled U.S.  
5 sales and so that volume is 81,540 UIMs were sold in the United  
6 States. I then went to the next line that's the 143 profit  
7 number that you saw a few slides ago and then what I did is I  
8 applied the go different permission so I applied the three  
9 percent and the 11 percent even though the 11 percent we know  
10 is not correct but I wanted to include it here and so what you  
11 see is a measure of Ford's unjust enrichment based on those  
12 percentages of 350,000 to about 1.3 million.

13 Q. And for identification, this is marked as Exhibit 945.2,  
14 this slide, is that right?

15 A. Yes.

16 Q. Okay. And did you create a summary slide with regards to  
17 the three different positions for unjust enrichment for  
18 trademark infringement?

19 A. I did.

20 Q. Why don't you explain this slide.

21 A. So these are the three numbers we just talked about. So  
22 how much did InterMotive spend the Upfitter Interface Module  
23 name and that was the advertisements and the trade shows that  
24 they identified to the -- to the Trademark Office when they  
25 were applying for their -- for the Upfitter Interface Module

1 name and so that's -- it's 61 -- \$60,630. The two other bars  
2 are the 3 percent and 11 percent numbers that I was just  
3 talking about and so that's the 350,000 and then 1.3 million.

4 Q. And what do you think -- obviously there's these three  
5 different numbers. Where in your estimation is the appropriate  
6 result if you assume liability?

7 A. I assume liability, I -- I think that number falls  
8 somewhere between the left two numbers so somewhere between 60  
9 thousand and 350,000 and the reason why is the 1.3 million, we  
10 know the 11 percent number just wasn't correct and so it  
11 wouldn't be fair to look at that as an unjust enrichment number  
12 but since it was a number that InterMotive had provided I  
13 wanted to do the math but I think it would be somewhere between  
14 those two numbers.

15 Q. I wanted to take you back to that slide from Mr. Robinson  
16 because he talked about this notion of co-branding?

17 A. Yes.

18 Q. Did you look at any documents with regards to a notion of  
19 co-branding?

20 A. I -- it wasn't documents per se but I tried to look to see  
21 if, you know, kind of if there was any sort of uplift or things  
22 like that related to -- related to InterMotive's own sales.

23 Q. Did you create a slide to show that up lift that happened  
24 when Ford began using the Ford Upfitter Interface Module name?

25 A. I did.

# EXHIBIT 2

**From:** Monnan, Syed (S.M.)  
**Sent:** Friday, August 08, 2014 12:08:46 PM  
**To:** Hrecznyj, Michael (.); Seashore, Patricia (P.J.)  
**Subject:** Upfitter Module Name Change

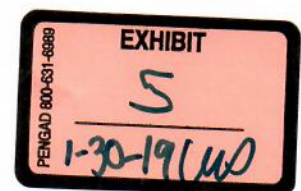
Mike/Pat

It appears the Upfitter Interface Module (UIM) name may be used by an existing aftermarket Supplier. To ensure we don't run into any issues with another potential company that has the same name as UIM, I recommend we change the name to Programmable Upfitter Interface Module (PUIM), or Programmable Interface Module (PIM), or Programmable Upfitter Module (PUM)

Your thoughts?

Thanks

Syed Monnan  
EE Comp Rlse Engr  
Body / Security Electronics  
P558 Super Duty F-Series  
Email: [smonnan@ford.com](mailto:smonnan@ford.com) / Ph: 313-806-5284



**From:** Freiburger, Randy (R.M.) <rfeibur@ford.com>  
**Sent:** Tuesday, January 24, 2012 11:02 AM  
**To:** Marc Ellison <MEllison@intermotive.net>  
**Cc:** Stevens, Robert (R.W.) <rsteven1@ford.com>; Greg Schafer <GSchafer@intermotive.net>  
**Subject:** RE: Upfitter Interface Module - Mtg follow Up

Marc,  
 I spoke with our electrical group and they are pulling the message list for you now. I am scheduling a meeting with legal to ensure our NDA covers the release of the message lists.

Best Regards,

Randy Freiburger  
 Police/Ambulance/QVM, Supervisor  
 PDC Bldg. / 1H-J21  
 Phone: 001-313-805-3709  
 email: rfeibur@ford.com  
 Share the Ford story at [www.TheFordStory.com](http://www.TheFordStory.com)

---

**From:** Marc Ellison [mailto:MEllison@intermotive.net]  
**Sent:** Monday, January 23, 2012 6:25 PM  
**To:** Freiburger, Randy (R.M.)  
**Cc:** Stevens, Robert (R.W.); Greg Schafer  
**Subject:** Upfitter Interface Module - Mtg follow Up

Thanks for your time on the 13<sup>th</sup>. Greg and I both felt that Ford and InterMotive are on the same page and moving towards the immediate term (Phase I), short-term (Phase II) and long-term (Phase III) solutions for the Upfitter Interface Module (UIM) that will benefit Ford's customers.

The purpose of this note is to re-affirm the action plan:

- InterMotive is creating special enhancements for the Ford version of the UIM (e.g. all 8 pins being field programmable for Ford versus 4 for all others)
- Marc will provide Ford (Todd Kaufman?) with a 2 -3 minute video of programming the Upfitter Interface Module for work truck applications we have started working on
- InterMotive (Marc, Greg, and Todd) will be present and/or on-stage for the Ford session at NTEA Work Truck Show (WTS)
- InterMotive personnel (Marc or Greg) will be present in the Ford booth during The Work Truck Show to support Ford and answer any customer questions about the UIM
- Rob Stevens to talk to Len Deluca about InterMotive's support role at the WTS and also having a table within the Ford display area
- Randy to work on the Phase III business case (InterMotive needs sales estimates to provide Randy with updated NRE and piece pricing) – just sent you the pricing information based off of the sales volumes you provided on Friday
- Randy to write a TSB regarding Ford's requirement for using the UIM for CAN data
- Joint visits between Marc and Randy to upfitters where appropriate
- InterMotive to certify upfitters for UIM (details not yet finalized)
- Joint effort on marketing materials for the UIM

Next Steps:

1. Put due dates on the action plan items
2. Forward action items to appropriate personnel
3. Schedule a follow up conference call to cross items off of the list and move forward with current or new items.

If you have any questions, please contact me.

Regards,

*Marc Ellison*  
 V.P. Sales & Marketing



An ISO 9001:2008 Registered Company  
 13395 New Airport Rd., Suite A, Auburn, CA 95602  
 Ph: 530-823-1048 Ext. 17 Cell: 530-210-1843  
 Fax: 530-823-1516  
[www.intermotive.net](http://www.intermotive.net)





**From:** Ald, Gwendolyn (G.M.) <gald@ford.com>  
**Sent:** Tuesday, March 13, 2012 1:09 PM  
**To:** Freiburger, Randy (R.M.) <rfreibur@ford.com>  
**Subject:** RE: TBBAS Contact Form Submission

---

Thanks. This is something I should know because people do ask sometimes.

Gwen Ald

-----Original Message-----

From: Freiburger, Randy (R.M.)  
Sent: Tuesday, March 13, 2012 11:14 AM  
To: Ald, Gwendolyn (G.M.)  
Subject: RE: TBBAS Contact Form Submission

I will investigate who is responsible.

Best Regards,

Randy Freiburger  
Police/Ambulance/QVM, Supervisor  
PDC Bldg. / 1H-J21  
Phone: 001-313-805-3709  
email: rfreibur@ford.com  
Share the Ford story at [www.TheFordStory.com](http://www.TheFordStory.com)

-----Original Message-----

From: Ald, Gwendolyn (G.M.)  
Sent: Tuesday, March 13, 2012 8:08 AM  
To: Freiburger, Randy (R.M.)  
Subject: RE: TBBAS Contact Form Submission

I would rather steer them to the standard module. But who manages the interaction if they do want access to the message list?

Gwen Ald

-----Original Message-----

From: Freiburger, Randy (R.M.)  
Sent: Tuesday, March 13, 2012 1:06 AM  
To: Ald, Gwendolyn (G.M.)  
Subject: RE: TBBAS Contact Form Submission

Yes. Intermotive module is available now in the aftermarket. When they meet all of the Ford requirements we will offer as a factory installed option (2015MY). It is my understanding that in cases like this, a company developing a module on their own would need to submit a request and there is a cost associated with having access to a message list.

Best Regards,

Randy Freiburger  
Police/Ambulance/QVM, Supervisor  
PDC Bldg. / 1H-J21  
Phone: 001-313-805-3709  
email: rfreibur@ford.com  
Share the Ford story at [www.TheFordStory.com](http://www.TheFordStory.com)

-----Original Message-----

From: Ald, Gwendolyn (G.M.)  
Sent: Monday, March 12, 2012 5:31 PM  
To: Freiburger, Randy (R.M.)  
Subject: FW: TBBAS Contact Form Submission

Randy,

Would this use case be able to use your gateway node?

Gwen Ald

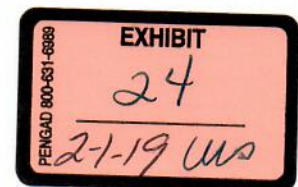
-----Original Message-----

From: Castleman, Sue (S.E.)  
Sent: Monday, March 12, 2012 2:13 PM  
To: Ald, Gwendolyn (G.M.)  
Cc: Basqa, B (B.); Jankowski, Brian (B.)  
Subject: RE: TBBAS Contact Form Submission

Hi Gwen,

Sounds like they are asking for the normal ECU messages rather than the diagnostic messages. Are you the correct contact for this?

-----Original Message-----



From: Jankowski, Brian (B.) On Behalf Of Basqa, B (B.)  
Sent: Monday, March 12, 2012 1:04 PM  
To: Castleman, Sue (S.E.)  
Cc: Basqa, B (B.)  
Subject: FW: TBBAS Contact Form Submission

Ms. Castleman,

Based on this request, would you recommend I forward your name as a contact to help resolve his issue?

Brian Jankowski  
Ford Truck Body Builder Advisory Service [www.fleet.ford.com/truckbbas/](http://www.fleet.ford.com/truckbbas/)  
(877) 840-4338

-----Original Message-----

From: bbasqa@ford.com [mailto:[bbasqa@ford.com](mailto:bbasqa@ford.com)]  
Sent: Friday, March 09, 2012 4:30 PM  
To: Basqa, B (B.)  
Subject: TBBAS Contact Form Submission

TBBAS Contact Form Submission

Client Information

Name: Ben Martinsen  
Title:  
Company: Boss Industries, Inc.  
Phone Number: (800) 6356587 ext.  
Fax Number: (219) 3247470  
Email Address: [bmartinsen@bossair.com](mailto:bmartinsen@bossair.com)  
Street1: 1761 Genesis Dr  
Street2:  
City: La Porte  
State/Province: IN  
Zip Code: 46350

-----  
Vehicle Model: F-350 to F-550  
Model Year: 2012  
Engine: both  
Transmission: Torqshift  
Drive: 4x2  
Rear Wheels: single

Question: Good afternoon. I was recently at the NTEA Work Truck Show in Indianapolis and attended the Ford chassis update. They talked about the Intermotive Upfitter Interface Module, and how Ford had worked closely with Intermotive to develop it. I talked with Rob Stevens after the presentation, and he directed me to contact you guys to get going.

I am currently developing a CAN controller that interfaces my PTO-driven air compressor system with the engine and transmission system on the vehicle. We currently only have J1939 configured trucks available with this setup. I would like to add the Ford CAN network to our software as well. I can read the CAN messages, but I do not know how to interpret what I am reading at this point. I have purchased all of the J1939 documents to tie into the other medium duty trucks. I also purchased the J2284 document, but this did not contain any specific parameter information. Is there another document that I need to purchase, or can somebody work with me on reading certain parameters? I understand that this information is proprietary, but this could be an influencing factor on whether my customers purchase Ford trucks or other J1939 based trucks such as Freightliner or Navistar. Please let me know what I have to do to obtain this information. Thank you.  
Ben



**From:** Freiburger, Randy (R.M.)  
**Sent:** Friday, June 01, 2012 10:18:51 AM  
**To:** Seashore, Patricia (P.J.); Gabara, Anna (.)  
**Subject:** RE: Upfitter Interface Module

**Attachments:** UIM- ford only Rev C.PDF

With more signals going over the CAN bus, commercial vehicles traditionally have accessed signals via hardwired outputs from PCM for example to get VSS. When P473 launched, A/C clutch control went on the bus and emergency vehicles could not access it to turn on A/C clutch to support their applications. This module will support all commercial vehicle applications.

Best Regards,

Randy Freiburger  
Police/Ambulance/QVM, Supervisor  
PDC Bldg. / 1H-J21  
Phone: 001-313-805-3709  
email: [rfreibur@ford.com](mailto:rfreibur@ford.com)

Share the Ford story at [www.TheFordStory.com](http://www.TheFordStory.com)

---

**From:** Seashore, Patricia (P.J.)  
**Sent:** Friday, June 01, 2012 9:57 AM  
**To:** Freiburger, Randy (R.M.); Gabara, Anna (.)  
**Subject:** RE: Upfitter Interface Module

Randy – I have lost track of what this module is for. Can you give Anna and I a quick reminder? Target program, purpose, functions, etc. Thanks.

---

**From:** Freiburger, Randy (R.M.)  
**Sent:** Friday, June 01, 2012 9:43 AM  
**To:** Graham, Robert (S.); Seashore, Patricia (P.J.)  
**Subject:** RE: Upfitter Interface Module

Jo Ann is meeting with Piston this afternoon at 1:30pm to discuss being an intermediary for the InterMotive Upfitter Interface Module.

Best Regards,

Randy Freiburger  
Police/Ambulance/QVM, Supervisor  
PDC Bldg. / 1H-J21  
Phone: 001-313-805-3709  
email: [rfreibur@ford.com](mailto:rfreibur@ford.com)  
Share the Ford story at [www.TheFordStory.com](http://www.TheFordStory.com)

-----Original Appointment-----

**From:** Freiburger, Randy (R.M.)  
**Sent:** Wednesday, May 30, 2012 3:28 PM  
**To:** Freiburger, Randy (R.M.); Gigliotti, Jo Ann (J.); Hu, Jenny (J.Y.); Graham, Robert (S.); Seashore, Patricia (P.J.)  
**Subject:** Upfitter Interface Module  
**When:** Friday, June 01, 2012 9:30 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** AUDIO

Phone: 313-621-3673

Passcode: Redacted - Confidential

**Rescheduled.**

*I tried to open meeting, but cell phone I am borrowing would not enable the meeting.*



FORD006235



# FORD UPFITTER INTERFACE MODULE



## FEATURES & BENEFITS

- ◆ Cost-effective, safe link to OEM data bus
- ◆ Designed specifically for Ford vehicles
- ◆ 8 Field programmable data outputs
- ◆ 2 Inputs– Switch 1, Switch 2
- ◆ Easy to use graphical user interface for programming
- ◆ Programmable data outputs can be customized with parameters to meet your needs
- ◆ PDA Technology– Passive Data acquisition
- ◆ Outputs can drive standard automotive relays, LED's & warning lights (0.5 amps each)
- ◆ "Plug & Play" easy installation (No more tapping or splicing)
- ◆ Small size (4"x 2.5" x 1")- easy to install

## 8 Programmable Data Outputs

◆ Vehicle Speed	(Above / Below)
◆ Parking Brake	(On / Off)
◆ Service Brake Applied	(On / Off)
◆ Battery Voltage	(Above / Below)
◆ Fuel Level Input	(Above / Below)
◆ A/C Clutch Engaged	(On / Off)
◆ RPM	(Above / Below)
◆ Engine Coolant Temp	(Above / Below)
◆ Intake Air Temp	(Above / Below)
◆ Throttle Position	(C / O / WOT)
◆ Transmission Range	(P, R, N, D)
◆ Transmission Fluid Temp	(Above / Below)
◆ Engine Running Status	(Digital)
◆ Door(s)	(Open / Closed)
◆ Headlights	(On / Off)
◆ Turn Signals	(On / Off)
◆ Door Locks	(Locked / Unlocked)
◆ ABS Event	(True / False)
◆ Check Engine Light	(On / Off)
◆ Engine Oil Pressure Lamp	(On / Off)
◆ Driver's Seat Belt	(True / False)
◆ VSS (Vehicle Speed)	(Variable Freq.)
◆ CTO (Clean Tach Output)	(Variable Freq.)
◆ Ignition Status	(On / Off)

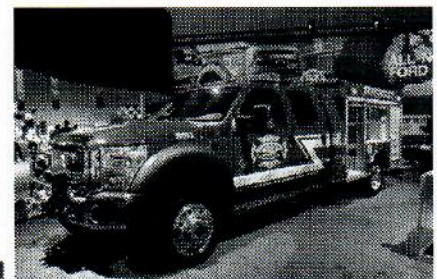
## Switch Inputs

◆ Switch 1	(Ground)
◆ Switch 2	(Ground)

Programmed using FREE software from InterMotive

Example 1: Turn on Pin 5 when RPM < 2,000 **AND** switch 1 is "on"

Example 2: Turn on Pin 6 when a door is open **OR** switch 2 is "on"



Rev. C

An ISO 9001:2008 Registered Manufacturer  
www.InterMotive.net 800-969-6080





**From:** Seashore, Patricia (P.J.)  
**Sent:** Wednesday, August 01, 2012 8:54:34 AM  
**To:** Toon, Ryan (R.S.); Freiburger, Randy (R.M.); Hu, Jenny (J.Y.); Gabara, Anna (.)  
**CC:** Graham, Robert (S.)  
**Subject:** RE: Upfitter Interface Module

We need to include someone from Dante Crocket's team since the Upfitter's Interface Module from InterMotive has not been approved by his team.

---

**From:** Toon, Ryan (R.S.)  
**Sent:** Wednesday, August 01, 2012 8:53 AM  
**To:** Freiburger, Randy (R.M.); Hu, Jenny (J.Y.); Gabara, Anna (.)  
**Cc:** Graham, Robert (S.); Seashore, Patricia (P.J.)  
**Subject:** RE: Upfitter Interface Module

Randy,

Can you please arrange a call so that the team can discuss? We want to be able to support in the best possible way.

Also -- as Flextronics is already a Tier 1 supplier to Ford there is a NDA in place.

---

**From:** Freiburger, Randy (R.M.)  
**Sent:** Wednesday, August 01, 2012 8:38 AM  
**To:** Hu, Jenny (J.Y.); Toon, Ryan (R.S.); Gabara, Anna (.)  
**Cc:** Graham, Robert (S.)  
**Subject:** Upfitter Interface Module  
**Importance:** High

We are in a very difficult situation for timing for the Upfitter Interface Module. End of last year we had a few reviews on whether to use the ATM module for the Upfitter Interface Module and were told to proceed on the path with InterMotive.

We are behind the competition for this type of module and need to hold 2015MY timing and cannot afford a slip in timing.

Now we are beginning the process with Flextronics. We signed a NDA with InterMotive.

**Redacted - Privileged**

We have a vehicle demonstrating the capability needed that is being reviewed by our management up to a very senior level.

This vehicle is leaving for a national law enforcement conference very soon.

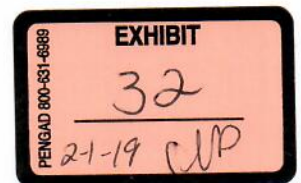
Every day is critical to meet timing.

Based on the information available, it does not appear that we have another week to study alternatives and maintain timing.

We will need to escalate very quickly.

Best Regards,

Randy Freiburger  
 Police/Ambulance/QVM, Supervisor  
 PDC Bldg. / 1H-J21  
 Phone: 001-313-805-3709  
 email: [rfreibur@ford.com](mailto:rfreibur@ford.com)  
 Share the Ford story at [www.TheFordStory.com](http://www.TheFordStory.com)



# EXHIBIT 60

## Ford Chassis Session video

(IM0000069)



# EXHIBIT 61

## Ford Booth video

(IM0000068)



Message

**From:** Greg Schafer [GSchafer@intermotive.net]  
**Sent:** 5/17/2012 5:48:41 PM  
**To:** Marc Ellison [MEllison@intermotive.net]; Linda Schafer [LSchafer@intermotive.net]  
**CC:** Dan Mower [DMower@intermotive.net]  
**Subject:** FW: Ford Pool Account Meeting Update  
**Attachments:** UIM- ford only Rev D.pdf

Fyi...

**From:** Greg Schafer  
**Sent:** Thursday, May 17, 2012 9:49 AM  
**To:** 'Dan Snyder'  
**Subject:** RE: Ford Pool Account Meeting Update

Dan,

It was good seeing you as well. I'd really like to just sit down sometime soon with a couple of drinks and catch up. Maybe on my next trip out your way.

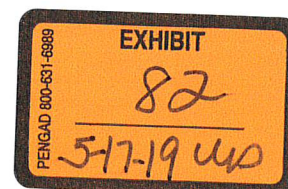
Also, I greatly appreciate the info from the pool meetings. We know a lot of people who attended them but they usually think we already know what's being said by Ford (not always the case). It's great to hear that Rob continues to push the Upfitter Interface Module (I've attached a brochure on it if you don't already have it). The GUI (programming software) and videos showing how to use the GUI are currently available to anyone on our web site. The UIM is available now on a lot of Ford current & past MY chassis and we've received quite a bit of data from Ford on the upcoming Transit. We are pushing Randy Freiburger to get the QVM Bulletin released on the UIM (Rob already said O.K. to doing it so I don't know what the hang-up is). We have several bigger pool account customers who want to use the UIM right now but won't do it without the QVM Bulletin released first. That part is very frustrating.

We believe we have the Transit coded correctly (based off of pre-release CAN firmware data) so are anxious to get on a vehicle and confirm the functionality. Do you know who is the current contact we should start to get to know on the Transit for this? We work with the SVE guys but have not meet with anyone from the vehicle side.

As always, just ask if there is anything you need from me and I'll do everything I can to make it happen. Thanks Dan.

-Greg

**From:** Dan Snyder [mailto:dsnyder01@charter.net]  
**Sent:** Wednesday, May 16, 2012 6:46 PM  
**To:** Greg Schafer  
**Subject:** Ford Pool Account Meeting Update



IM0000397

Greg,

Great to see you last week. Just wanted to give you an update from a couple of the Pool Account Sessions. Intermotive was well represented by Rob Stevens again.

At the Transit Body Builders Session, there were several questions regarding signal access. The meeting included mobility, ambulance, shuttle bus, motorhome and parcel delivery builders. Rob indicated that Intermotive would have an interface available. (I know Ford is working on this, but it will probably take years!). This vehicle is going to be a real home run, so Intermotive having a module for this vehicle is huge.

At the General Session (300 people), Rob again talked about the Intermotive interface module during his Product Update presentation (great commercial).

Just thought I'd drop you a note and let you know about the positive comments.

Dan Snyder

cell 313 580-4446

IM0000398



# WORK SMARTER THAN EVER.

A new **Upfitter Interface Module (UIM)**<sup>1</sup> for **Super Duty**® allows you to develop “smart” logic controls for your final-stage installed equipment – allowing end users to be more confident in controlling their upfits for a more seamless upfit experience.



Vehicles shown with optional features and aftermarket equipment.  
<sup>1</sup>Available feature. Fleet only on Pickups.

EXHIBIT

111

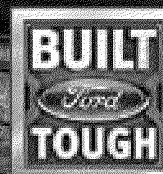


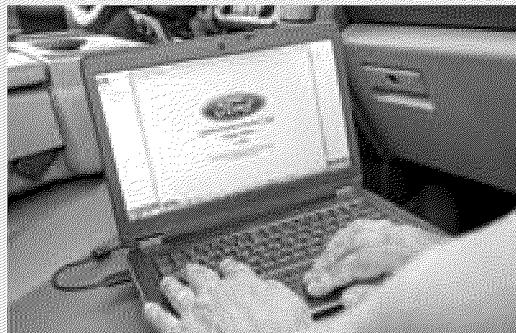
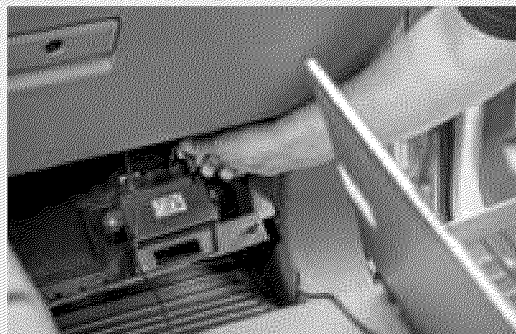
Exhibit 111

FORD094512



# CONTROL YOUR UPFIT WITH SMART LOGIC.

Case 4:17-cv-11584-TGB-APP ECF No. 257-3, PageID 10544 Filed 11/28/23 Page 37 of 58



## WHAT YOU GET.

The .exe program to modify and input your code for programming and delivering a smart upfit to your customer. Plus, unlike aftermarket upfitter modules currently on the market, the Upfitter Interface Module (UIM)<sup>1</sup> is warranted by Ford<sup>2</sup> and will not interrupt the Computer Area Network (CAN) data. In a 2017 Super Duty<sup>®</sup> equipped with the new UIM, the UIM and blunt cut harness consist of:

- Downloadable software to configure the UIM
- 10 configurable inputs:
  - Inputs 1 through 9 offer**
    - Mechanical-Latching (toggle-switch) or Momentary: software-toggle (push-on, push-off)
    - Active High or Active Low
  - Input 10 offers**
    - (9) Mechanical-Latching (toggle-switch) or Momentary: software-toggle (push-on, push-off)
    - (1) Active Low (fixed)
- 7 low-side driver output pins
- 8 high-side driver output pins
- Various CAN signals (descriptive names in configuration software)
- 3' long wires with UIM connectors

NOTE: You must use external relays to drive/control any equipment. The UIM module cannot provide high-current output control.

## WHAT YOU DO.

**Step 1:** Locate the UIM under the glove box above the hush panel. It comes with 3' harness connections for both input and output connectivity.

**Step 2:** Connect your laptop via the USB port and program the UIM with your logic control configuration.

## HOW YOU'LL BENEFIT.

The UIM gives you the ability to deliver a finished upfit, complete with “smart controls,” that will better satisfy the needs of your customer. Plus, by having certain parameters programmed to automatically react to the vehicle's CAN data, it helps to reduce the chance of user error that could damage the upfit. See the examples at right.

For more info: [fleet.ford.com/partsandservice/upfitter-interface](http://fleet.ford.com/partsandservice/upfitter-interface)

<sup>1</sup>Available feature. Fleet only on Pickups. <sup>2</sup>Covered by New Vehicle Limited Warranty. Please ask your Ford Dealer for a copy of this limited warranty. Body manufacturers are responsible for compliance certification of the completed vehicle. The Ford New Vehicle Limited Warranty and any government certification made by Ford shall cover only the vehicle as manufactured by Ford and shall not extend to any addition (hardware or software), modification or change of, or to, the vehicle by the Ford Authorized Pool Account.

©2016 Ford Motor Company • 17FSDUIMHC • Ford reserves the right to change product specifications, pricing and equipment at any time without incurring obligations. • See the Order Guide for availability and restrictions. Vehicles may be shown with optional equipment. • Information is provided on an “as is” basis and could include technical, typographical or other errors. Features may be offered only in combination with other options or subject to additional ordering requirements/limitations. Ford makes no warranties, representations, or guarantees of any kind, express or implied, including but not limited to, accuracy, currency, or completeness of the information, materials, content, availability, and products.



## FOR EXAMPLE:

### LOW-COMPLEXITY SOLUTION

**Having a salt spreader stop whenever the driver leaves the vehicle.** With the smart logic control of the UIM, the spreader can be programmed to disengage if the following parameters are met: vehicle enters either Park or Neutral, the driver door is open AND the safety belt is unbuckled. Instead of the driver having to remember to flip the spreader switch to Off, it will automatically disengage if these conditions are met.

### MEDIUM-COMPLEXITY SOLUTION

**Varying a salt spreader speed based on vehicle speed.** By programming the module to different conditions – say “Salt spreader Speed 1 below 3 mph” and “Salt spreader Speed 2 between 4 and 10 mph,” the module automatically outputs that data to the spreader based on CAN data from the vehicle – telling it to be at Speed 1 or Speed 2 based on vehicle speed. No input is needed from the driver.

### HIGH-COMPLEXITY SOLUTION

**Preventing the operation of a mechanical device when certain vehicle conditions are not in range.** Say you have a front-mounted auger – you can program the module to monitor these critical parameters: vehicle in Park or Neutral, engine status, and operator safety engaged. The auger will only operate while all parameters are in a normal mode. If the UIM detects an out-of-range condition, the auger will switch to Off automatically.



**From:** Aguirre, Adrian (A.) <aaguir13@ford.com>  
**Sent:** Tuesday, April 25, 2017 12:42 PM  
**To:** Protopapas, Maria (M.E.) <mprotopa@ford.com>; Williams, Darren (D.J.) <dwilli65@ford.com>; Monnan, Syed (S.M.) <smonnan@ford.com>; Ruggirello, Craig (C.S.) <cruggire@ford.com>; Daniel, Andras (A.) <ADANI109@ford.com>; Pandal, Gabriela (G.) <gpandal@ford.com>; Mince, Robert (R.W.) <rmince@ford.com>; Diaz, Rodrigo (RoD.) <rdiaz32@ford.com>; Schaeffer, Eric (E.S.) <eschaeff@ford.com>; De Biasi, Chuck (C.J.) <cdebiasi@ford.com>; Molina, Rene (R.) <rmolin22@ford.com>  
**Cc:** Rodriguez garrido, Laura (L.) <lrodr155@ford.com>; Hodge, Andy (A.) <ahodge5@ford.com>; Fabres, Nuria (N.) <NFABRES@ford.com>; Van Ryswyk, Robert (R.J.) <rvanrys1@ford.com>; Murphy, Richard (R.) <RMURP121@ford.com>; Murphy, Ian (I.) <imurphy2@ford.com>; Hallworth, Marina Zouni (M.Z.) <mzouni@ford.com>  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

Darren;  
 Thanks. If we can bring up the take rate, we will fund the ED&T.

Syed;  
 Please lets update the 2 pager to include the take rate increase and document our agreed revenue. We can discuss this Thursday at CPEDF and approve.

Thanks,

Adrian

**From:** Protopapas, Maria (M.E.)  
**Sent:** Tuesday, April 25, 2017 12:28 PM  
**To:** Williams, Darren (D.J.) <dwilli65@ford.com>; Aguirre, Adrian (A.) <aaguir13@ford.com>; Monnan, Syed (S.M.) <smonnan@ford.com>; Ruggirello, Craig (C.S.) <cruggire@ford.com>; Daniel, Andras (A.) <ADANI109@ford.com>; Pandal, Gabriela (G.) <gpandal@ford.com>; Mince, Robert (R.W.) <rmince@ford.com>; Diaz, Rodrigo (RoD.) <rdiaz32@ford.com>; Schaeffer, Eric (E.S.) <eschaeff@ford.com>; De Biasi, Chuck (C.J.) <cdebiasi@ford.com>  
**Cc:** Rodriguez garrido, Laura (L.) <lrodr155@ford.com>; Hodge, Andy (A.) <ahodge5@ford.com>; Molina, Rene (R.) <rmolin22@ford.com>; Fabres, Nuria (N.) <NFABRES@ford.com>; Van Ryswyk, Robert (R.J.) <rvanrys1@ford.com>; Murphy, Richard (R.) <RMURP121@ford.com>; Murphy, Ian (I.) <imurphy2@ford.com>; Hallworth, Marina Zouni (M.Z.) <mzouni@ford.com>  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

All -- It appears that both programs, V362 and V408 will retain the UIM module. There is still the open item of the UIM ED&T that was allocated to V408, V362's allocation is approved. What still remains to close this out? Please advise.

Respectfully,

**Maria Protopapas**  
 EESE Body Modules Supervisor  
[mprotopa@ford.com](mailto:mprotopa@ford.com)  
 313-805-6742

**From:** Williams, Darren (D.J.)  
**Sent:** Tuesday, April 25, 2017 6:38 AM  
**To:** Aguirre, Adrian (A.); Monnan, Syed (S.M.); Ruggirello, Craig (C.S.); Daniel, Andras (A.); Pandal, Gabriela (G.); Protopapas, Maria (M.E.); Mince, Robert (R.W.); Diaz, Rodrigo (RoD.); Schaeffer, Eric (E.S.); De Biasi, Chuck (C.J.)  
**Cc:** Rodriguez garrido, Laura (L.); Hodge, Andy (A.); Molina, Rene (R.); Fabres, Nuria (N.); Van Ryswyk, Robert (R.J.); Murphy, Richard (R.); Murphy, Ian (I.); Hallworth, Marina Zouni (M.Z.)  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

Hi Adrian,

I have spent time talking this through with my Transit, SVE and Brand Finance colleagues. Here are my findings:-

- This Programmable Interface / Upfitter Module was requested back in 2014 for V408 as an SVO Enquiry (408009) as it provides an invaluable interface for Wheelchair access vehicles, Taxis, Utilities, Refrigeration vehicles etc.
- In the interim, this enquiry has become RPO for both Transit and Connect
- The revenue for the module has already been increased at an earlier gateway (due to low TARR) from €100 to €150. This is now slightly on the high side competitively vs. Berlingo converter pack at €120, so we do not think we can raise the revenue further for V408MCA.
- At €150 this gives a net revenue of \$104 -- Gabriela, please could you check this against your CM calculations below.
- We are looking to expand our 'conversions' business in Europe in the future, so it is very important to retain the module in the V408 MCA programme assumptions
- Given the above expansion, we think we can therefore increase the take rate on V408 MCA from 1% to 2%. From Gabriela's note below, we believe this will bring the TARR to a positive position again.

Regards

**Darren Williams** CEng  
 LCV & Ranger Advanced Product Mktg Manager  
 Tel: +44 1268 406026 / 738-6026  
 Mail: GB15/3A-C06  
 eMail: [dwilli65@ford.com](mailto:dwilli65@ford.com)  
 Ford Motor Company Limited. Registered in England: No.23544

Registered Office: Eagle Way, Brentwood, Essex, CM13 3BW, England.

**From:** Aguirre, Adrian (A.)  
**Sent:** 25 April 2017 05:04  
**To:** Monnan, Syed (S.M.); Ruggirello, Craig (C.S.); Williams, Darren (D.J.); Daniel, Andras (A.); Pandal, Gabriela (G.); Protopapas, Maria (M.E.); Mince, Robert (R.W.); Diaz, Rodrigo (RoD.); Schaeffer, Eric (E.S.); De Biasi, Chuck (C.J.)  
**Cc:** Rodriguez garrido, Laura (L.); Hodge, Andy (A.); Molina, Rene (R.); Fabres, Nuria (N.)  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

Darren;  
 Any thoughts on this one? Would like to close it out once and for all.

Thanks,

Adrian

**From:** Monnan, Syed (S.M.)  
**Sent:** Thursday, April 20, 2017 3:23 PM  
**To:** Ruggirello, Craig (C.S.) <cruggire@ford.com>; Williams, Darren (D.J.) <dwilli65@ford.com>; Daniel, Andras (A.) <ADANI109@ford.com>; Pandal, Gabriela (G.) <gpandal@ford.com>; Aguirre, Adrian (A.) <aaguir13@ford.com>; Protopapas, Maria (M.E.) <mprotopa@ford.com>; Mince, Robert (R.W.) <rmince@ford.com>; Diaz, Rodrigo (RoD.) <rdiaz32@ford.com>; Schaeffer, Eric (E.S.) <eschaeff@ford.com>; De Biasi, Chuck (C.J.) <cdebiasi@ford.com>  
**Cc:** Rodriguez garrido, Laura (L.) <lrodr155@ford.com>; Hodge, Andy (A.) <ahodge5@ford.com>  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

After a further discussion internally, we need feedback from the Marketing team.

Craig/Darren

Can you help provide a decision on the options listed below or other recommendations.

Thanks  
 Syed

**From:** Monnan, Syed (S.M.)  
**Sent:** Wednesday, April 12, 2017 11:12 AM  
**To:** Pandal, Gabriela (G.); Aguirre, Adrian (A.); Protopapas, Maria (M.E.); Mince, Robert (R.W.); Ruggirello, Craig (C.S.); Diaz, Rodrigo (RoD.); Schaeffer, Eric (E.S.); De Biasi, Chuck (C.J.); Williams, Darren (D.J.); Daniel, Andras (A.)  
**Cc:** Rodriguez garrido, Laura (L.); Hodge, Andy (A.)  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

+ other recipients

Gabriela/Adrian,  
 Thanks for your feedback.

So I need some direction, what is the final decision?

- 1) Do we increase the take rate or get the 50% improvement to get a positive TARR? Or
- 2) Take a loss at the current 1% take rate? Or
- 3) Delete the module out of the Program altogether? Or
- 4) Other recommendation

Regardless of what recommendation is made in the above choices, the 300K and/or cancellation costs (if decision to cancel) needs to be paid to the supplier since most of the development work has been already done.

Can someone help make a decision so we can move forward and close out the issue?

Brief summary regarding the 300K ED&T. The process was started long before PA, but got held up due to commercial re-negotiations (amortized vs non-amortized), strategy of splitting payment between V362 and V408, and other logistical issues with the online system. Once these got resolved, unfortunately was passed the PA milestone but the intent of funding the 300K ED&T was always there from the beginning. Right now, it has already gone thru the GB process and approved (2/2/17), but as Adrian mentioned the money has been lost from the Program since it is past PA financials.

Thanks

**From:** Pandal, Gabriela (G.)  
**Sent:** Tuesday, April 11, 2017 4:38 PM  
**To:** Aguirre, Adrian (A.); Monnan, Syed (S.M.); Protopapas, Maria (M.E.); Mince, Robert (R.W.)  
**Cc:** Rodriguez garrido, Laura (L.); Hodge, Andy (A.); Ruggirello, Craig (C.S.)  
**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

We would need a 50% improvement (approx. \$30 usd per unit) in Contribution Margin to get to breakeven. Or we could increase 1% Mix in EU (2% ilo 1%)

**From:** Aguirre, Adrian (A.)  
**Sent:** martes, 11 de abril de 2017 03:11 p.m.  
**To:** Pandal, Gabriela (G.); Monnan, Syed (S.M.); Protopapas, Maria (M.E.); Mince, Robert (R.W.)

**Cc:** Rodriguez garrido, Laura (L.); Hodge, Andy (A.); Ruggirello, Craig (C.S.)

**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

Gaby;

Thanks – what contribution margin and associated revenue would we need so we get to a positive TARR / NPV? Lets see if this is doable because the low take rate and negative business case does not support the spending.

Syed;

As I have mentioned before. Unfortunately on Transit Connect we can only take the feature if the development is already paid for. The agreement to assign 300K to V408MCA was done without putting it in the <PA> financials.

Cheers,

Adrian

---

**From:** Pandal, Gabriela (G.)

**Sent:** Tuesday, April 11, 2017 1:59 PM

**To:** Aguirre, Adrian (A.) <aaguir13@ford.com>

**Cc:** Monnan, Syed (S.M.) <smonnan@ford.com>; Rodriguez garrido, Laura (L.) <lrodr155@ford.com>; Hodge, Andy (A.) <ahodge5@ford.com>; Ruggirello, Craig (C.S.) <cruggire@ford.com>

**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

**Importance:** High

Adrian,

Over the past few months there have been a lot of emails going back and forth regarding the Upfitter Module. Apparently this feature has been included in the PDL but the ED&T funding (\$300k usd) was not contained in the financials we carried through PA since this item was not approved by the Governance Board at the time of the gateway.

D&R has been requesting finance approval in GB Form to move forward, however I cannot do so without funding approval – CPE & VLD approval is required because of the impact.

Please see attached the business case. Here is a summary:

Assumptions

- Mix – EU 1% / NA 0%
- Contribution Margin \$58 USD Per Unit
- ED&T \$300K – To be paid as lump sum

Outcome

*Negative TARR & NPV* – Feature has a positive Contribution Margin however volume/mix is too low to achieve breakeven vs investment.

Syed,

If Adrian is ok to proceed we should document the approval with a 2pager.

Regards,

Gaby

---

**From:** Ruggirello, Craig (C.S.)

**Sent:** jueves, 23 de febrero de 2017 03:45 p.m.

**To:** Monnan, Syed (S.M.)

**Cc:** Allan, Jonathan (J.M.); Murphy, Richard (R.); Pandal, Gabriela (G.); Aguirre, Adrian (A.); Aparicio zuleta, Erick (E.); McNally, Ryan (R.M.); Stoeher, Timothy (T.G.)

**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

I thought we decided against the upfitter module?

---

**From:** Monnan, Syed (S.M.)

**Sent:** Thursday, February 23, 2017 9:38 AM

**To:** Ruggirello, Craig (C.S.)

**Cc:** Allan, Jonathan (J.M.); Murphy, Richard (R.); Pandal, Gabriela (G.); Aguirre, Adrian (A.); Aparicio zuleta, Erick (E.); McNally, Ryan (R.M.); Stoeher, Timothy (T.G.)

**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

Craig

Can you help provide the revenue figures for the Upfitter Module on V408MCA, part# JK2T-14G372-A\*?

There is a funding of \$300K ED&T that is still open and need this revenue information.

Thanks

---

**From:** Pandal, Gabriela (G.)

**Sent:** Monday, February 20, 2017 4:16 PM

**To:** Aguirre, Adrian (A.)

**Cc:** Monnan, Syed (S.M.); Allan, Jonathan (J.M.); Murphy, Richard (R.)

**Subject:** RE: Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

No Adrian, we haven't.

We would only need revenue figures from Marketing.

---

**From:** Aguirre, Adrian (A.)  
**Sent:** domingo, 19 de febrero de 2017 07:58 p.m.  
**To:** Allan, Jonathan (J.M.); Murphy, Richard (R.); Pandal, Gabriela (G.)  
**Cc:** Monnan, Syed (S.M.)  
**Subject:** Business case for Upfitter Interface Module - RE: ED&T Request - Final Approvals Needed ID#4950

Hi Jonathan;

We are all in a similar position. For V408MCA the talk / request for the ED&T came post <PA>. Will run the business case to confirm if at this level of ED&T it makes sense.

Gaby;

Have we already run a business case for the Upfitter Interface module? We need to spend \$300K in ED&T. Thanks

Cheers,

Adrian

---

**From:** Allan, Jonathan (J.M.)  
**Sent:** Thursday, February 16, 2017 12:51 PM  
**To:** Murphy, Richard (R.) <RMURP121@ford.com>; Aguirre, Adrian (A.) <aaguir13@ford.com>  
**Cc:** Monnan, Syed (S.M.) <smonnan@ford.com>  
**Subject:** RE: ED&T Request - Final Approvals Needed ID#4950

Hi Adrian,

We can take this to David Gregory Tech review however there is no funding available as it is very late in the program approaching PEC in March.

Since the take rate was projected low for V362 MCA it would not have made a business case to fund the development for this program alone.

At the time the only alternative was to go with the carry over modules lacking the latest functionality and user interface.

The agreement at that time was to split the software development costs for the increased functionality between the V362 MCA and the V408 MCA program; favouring V408 MCA since V362 MCA was the lead.

We know this is a real customer want for this on commercial vehicles and unless we can find a compromise we may lose this feature.

Regards,

Jonathan Allan

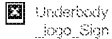
**Supervisor, Underbody Electronics**

Electrical & Electronics Systems Engineering (EESSE)

Ford Product Development Commercial Vehicles Dunton

Mob: GB15 728-E11-C Mobile: +44(0)7557 181949 Phone: +44(0)1268 40 5268 Ford Net: 8 738 5268

Ford Motor Company Limited Registered in England. No. 213476. Registered Office: Edge Way, Brierley Wood, Birmingham, Essex, CV35 9EF, England



---

**From:** Murphy, Richard (R.)  
**Sent:** 16 February 2017 17:32  
**To:** Allan, Jonathan (J.M.)  
**Cc:** Monnan, Syed (S.M.)  
**Subject:** FW: ED&T Request - Final Approvals Needed ID#4950

Hi Jon,

Can we get CPE involved to help resolve this?

Kind Regards,

**R Murphy**

---

**From:** Monnan, Syed (S.M.)  
**Sent:** 10 February 2017 20:24  
**To:** Aguirre, Adrian (A.) <aaguir13@ford.com>; Murphy, Richard (R.) <RMURP121@ford.com>  
**Cc:** Pandal, Gabriela (G.) <gpandal@ford.com>  
**Subject:** RE: ED&T Request - Final Approvals Needed ID#4950

Adrian,  
Thanks for your feedback.

Richard,  
Is this something you can discuss with the V362 management/Chief? The funding of the \$300K along with your \$460K?

---

**From:** Aguirre, Adrian (A.)  
**Sent:** Friday, February 10, 2017 11:24 AM  
**To:** Monnan, Syed (S.M.)  
**Cc:** Pandal, Gabriela (G.); Murphy, Richard (R.)  
**Subject:** RE: ED&T Request - Final Approvals Needed ID#4950

Syed;  
I am aligned. If V408 was first we'd pay. But we aren't. So First user pays.

Adrian

---

**From:** Monnan, Syed (S.M.)  
**Sent:** Thursday, February 02, 2017 12:37 PM  
**To:** Aguirre, Adrian (A.) <aaguir13@ford.com>  
**Cc:** Pandal, Gabriela (G.) <gpandal@ford.com>; Murphy, Richard (R.) <RMURP121@ford.com>  
**Subject:** FW: ED&T Request - Final Approvals Needed ID#4950

Hello Adrian

From the email below, some high level approvals have gone through including the GB. I'd like to provide some feedback so there is a better level of understanding since you were not involved in the working level discussions for this component.

FYI – Richard is leading the component for the V362MCA

To the best of my recollection, about 1-2 yrs ago, the s/w that was developed was intended to be common among V408 and V362 since both are Transit vehicles which share some commonality in certain areas of functionality. With respect to the UIM, no one from the V408 team had any specific rqmts. However, the V362 team helped define all the requirements and did all the work for V408 to keep the s/w common which keeps the ED&T costs down. The ESOW from the very beginning was done based on common S/W (below is a snap shot of the ESOW header, FYI). It just happened that V362 timing came first and that made them the lead. Had V408 timing come first, then V408 would probably have had to fund all \$760K, or at minimum, the bigger portion of 460K.



The CPARS order is on track for approval, and ED&T is also on track for approval. As far as any concerns, if V408MCA needs the module, I believe the Marketing team went through that process and decided to keep it for Eu when changing the take rates from 8% to 1%. Also note, V362MCA is also 1% and theirs was never changed, it was 1% from the start, and still they wanted the component for their market needs.

So if you can help provide your approval for V408 then the finance team can enter their approval and we can move forward with the remaining approvals. If you have any concerns, please let us know.

Thanks  
Syed

---

**From:** SharePoint, NoReply (.)  
**Sent:** Thursday, February 02, 2017 10:31 AM  
**To:** Gray, Chuck (E.); Pandal, Gabriela (G.)  
**Cc:** Monnan, Syed (S.M.)  
**Subject:** ED&T Request - Final Approvals Needed ID#4950

The following ED&T Request, [ID#4950](#), has been Approved by the PD Chief Engineer/Manager, Purchasing Manager, and Governance Board and is now being sent to you for final approval. Please click on the ID# link to provide your approval/rejection.

Request Type: Lump Sum  
Model Year / Lead Vehicle: 2018MY V408 MCA  
Region: FNA

[Related ED&T Commodity Models:](#)

Electrical - BSE - UIM (5003)

Submitted By: FORDNA1\smonnan

Submitted On: 12/14/2015 10:52:52 AM



**Q-251R2****SVE BULLETIN****SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE**E-Mail via Website: [www.FordBBAS.com](http://www.FordBBAS.com) (click "Contact Us")

Toll-free: (877) 840-4338

**EXHIBIT 124**

Witness: Timothy Stoehr

Date: 4/28/21

Court Reporter: Cheri Gleyre, CSR-6548

QVM BULLETIN: Q-251R2

DATE: 05/ JUN / 2020

**Ford Upfitter Interface Module (UIM)**

REVISION	UPDATE	REVISION DATE
Q-251R2	ADDED MODEL YEAR CUTOFF	5JUN2020
Q-251R1	REMOVED UIM EMAIL INFORMATION.	12AUG2016
Q-251	INITIAL RELEASE	08AUG2016

**MODEL(S) AFFECTED:**

All 2017 through 2019 models available with the option Gen 1 Upfitter Interface Module

**ISSUE / DESCRIPTION:****Purpose:**

To describe the optional Upfitter Interface Module (UIM), UIM hardware, UIM software, and user's guides.

**Upfitter Interface Module overview:**

The UPFITTER INTERFACE MODULE (UIM) is an electronic control module that provides output signals for aftermarket equipment (such as lift buckets, cranes, motors, salt spreaders, snow plows, etc.) via customer programmable logic based on switch inputs and vehicle CAN bus messages. The operation of such equipment is limited to the load parameters of the UIM. The UIM does not come pre-programmed for use. It must be configured by the Upfitter for aftermarket equipment.

The UIM is configured using the UIM Project Editor, which is compatible with Windows 7 and Windows 8 Operating Systems. The user must obtain the UIM Project Editor installation package by downloading it from the Ford Fleet website (<http://www.fleet.ford.com/login/>). The UIM Project Editor allows the user to program the application logic for each UIM output based on UIM inputs and CAN signals. A standard Type B Universal Serial Bus (USB) 2.0 cable is required (not included) to connect the user's PC to the UIM, to download the application logic. The upfitter created application may be loaded to UIM when it is mounted in vehicle, or the UIM can be removed and software bench loaded.

In order to successfully create and implement an Upfitter application, these other documents and material may be required:

- The UIM (pre-installed in the vehicle when ordered, or may be purchased separately.) Replacement UIM's are available through the dealership.

-The UIM Read Me first

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42889&docbase=edmsna1>)

-UIM project examples file

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42b3a&docbase=edmsna1>)

- UIM Project Editor User Manual

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42887&docbase=edmsna1>)

- UIM Owner's Manual

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42888&docbase=edmsna1>)

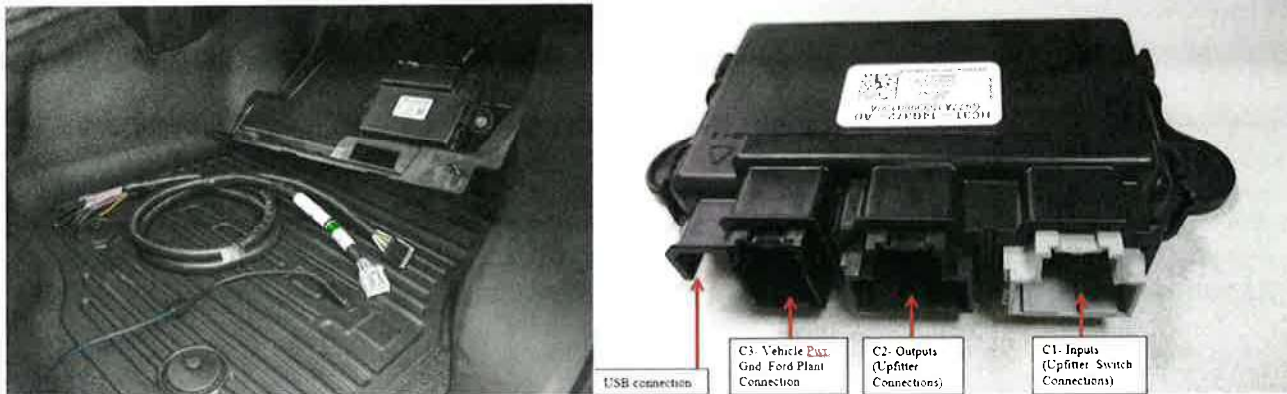
**EXHIBIT****124**



- Windows based UIM Project Editor software  
(see [Downloading Software](http://www.fleet.ford.com/login/)) (<http://www.fleet.ford.com/login/>)

- The UIM 16-way harnesses 9 (two blunt cut 3' harnesses with connectors). Replacement harnesses are available through the dealership.

- A standard Type B Universal Serial Bus (USB) 2.0 cable (not included- must be provided by the upfitter)



**Left:** UIM as mounted in the 2017MY Super Duty, and interface cables (included) and USB cable (Not included)

**Right:** UIM connectors

#### **Downloading Software from the Ford Fleet website:**

The Windows based UIM project editor software is available through the Ford Fleet website (<http://www.fleet.ford.com/login/>). Existing Ford Fleet website users may use their current login. New users should follow the instructions listed on "creating an account" via the link provided. If you have questions or need further assistance with the Ford Fleet Website, contact the Ford Fleet Customer Information Center at:

1-800-34-FLEET (1-800-343-5338).

Monday-Friday 8:30 AM-5 PM EST

Or

Contact Ford Fleet via [email](http://www.fleet.ford.com/contact-us/customer-information-center/email-us/) (<http://www.fleet.ford.com/contact-us/customer-information-center/email-us/>)

**Note:** Ford Motor Company is not responsible for debugging or verifying the function of the customer created UIM program files. It is the responsibility of the upfitter to ensure proper function of the software created to complete their upfit.

#### **UIM signals:**

The UIM receives 28 high speed CAN "read only" signals from various vehicle systems, providing upfitter access for aftermarket equipment needs. In addition, the upfitter may provide up to 9 additional inputs. These messages and inputs may be selected by the upfitter in the Project Editor to program the UIM outputs for aftermarket equipment. Note that the UIM has no interaction with vehicle feature functions (with the exception of horn chirp). It is strictly designed to provide outputs for aftermarket equipment.

The UIM provides the following:

- 9 configurable inputs (active low or active high), (blunt cut pigtail connector\*)
- 7 Low side driver output pins (blunt cut pigtail connector\*)
- 8 High side driver output pins (blunt cut pigtail connector\*)
- 25-30 HSCAN signals (descriptive names in the Project Editor)
- \*Pigtails with 3 foot jumpers are provided for I/O's to connect to aftermarket devices.

Note: The UIM provides output signals only, and not intended to directly power any aftermarket device. Customer must use external relays to drive any equipment.

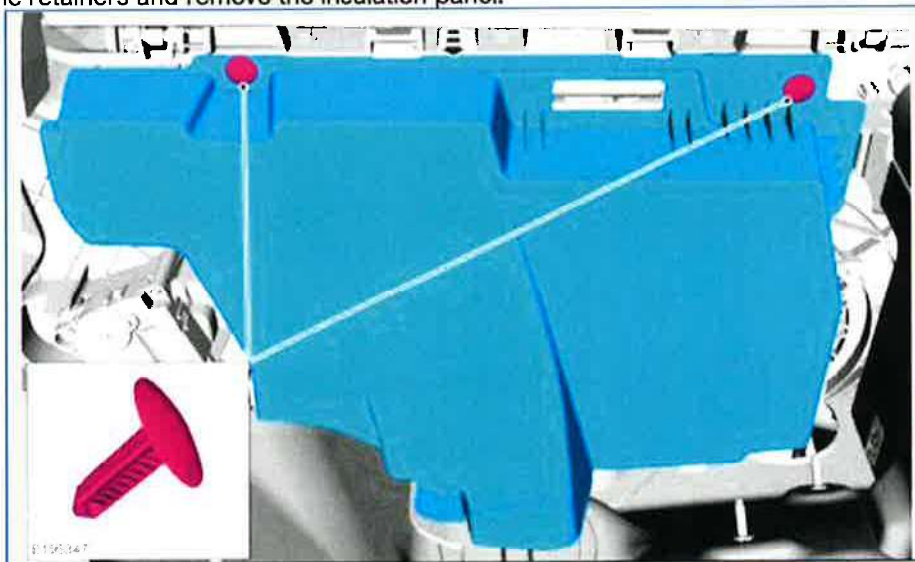
The following are some of the high-speed CAN messages available in to the UIM. See the UIM Project Editor's manual for more information.

Message	Message
Engine Coolant Temp	Rear Left Door Status
Engine Status	Rear Right Door Status
Outside Air Temp	Driver Door Status
A/C Compressor Clutch Status	Hood Status
Cruise Control Mode Status	Tire Pressure Monitoring System Status
Vehicle Speed	Air Conditioning (A/C) Request
Engine Speed (RPM)	Driver Seat Buckle Status
Transmission Oil Temp	Passenger Seat Buckle Status
Automatic Transmission Gear Status	Restraints Indicator Lamp (RIL) Status
Door Lock Status	Crash Event Severity
Ignition Status	Oil Pressure Lamp Status
Crash Event Status	Malfunction Indicator Lamp (MIL) Status
Passenger Door Status	Vehicle Battery Voltage
Odometer Reading	Fuel Level

#### 2017 MY Super Duty UIM location:

The UIM will be available as an orderable option (order code 18A) on the 2017 MY Super Duty. The module is located in the interior of the vehicle on the passenger side behind and below the Lower the glove compartment. To access the UIM:

1. Release the retainers and remove the insulation panel.



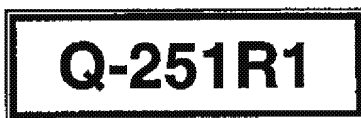
Refer to the Body Builder Layout Book for additional guidelines and recommendations. If you have any questions, please contact the [Ford Body Builders Advisory Service](#) as shown in the header of this bulletin.

# Exhibit 225

## Ford Programmable Upfitter Interface Module 'Critical' to Industry Video

(IM0008363)





## SVE BULLETIN

### SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

E-Mail via Website: [www.fleet.ford.com/truckbbas](http://www.fleet.ford.com/truckbbas) (click "Contact Us")

Toll-free: (877) 840-4338

QVM Bulletin: Q-251R1 Date: 08 August, 2016

Revision	Update	Revision/Date
Q-251R1	• Removed UIM email information.	12 August, 2016

## Ford Upfitter Interface Module (UIM)

**Models Affected:** All models available with the option Upfitter Interface Module

**Purpose:** To describe the optional Upfitter Interface Module (UIM), UIM hardware, UIM software, and user's guides.

### Upfitter Interface Module overview:

The UPFITTER INTERFACE MODULE (UIM) is an electronic control module that provides output signals for aftermarket equipment (such as lift buckets, cranes, motors, salt spreaders, snow plows, etc.) via customer programmable logic based on switch inputs and vehicle CAN bus messages. The operation of such equipment is limited to the load parameters of the UIM. The UIM does not come pre-programmed for use. It must be configured by the Upfitter for aftermarket equipment.

The UIM is configured using the UIM Project Editor, which is compatible with Windows 7 and Windows 8 Operating Systems. The user must obtain the UIM Project Editor installation package by downloading it from the Ford Fleet website (<http://www.fleet.ford.com/login/>). The UIM Project Editor allows the user to program the application logic for each UIM output based on UIM inputs and CAN signals. A standard Type B Universal Serial Bus (USB) 2.0 cable is required (not included) to connect the user's PC to the UIM, to download the application logic. The upfitter created application may be loaded to UIM when it is mounted in vehicle, or the UIM can be removed and software bench loaded.

In order to successfully create and implement an Upfitter application, these other documents and material may be required:

- The UIM (pre-installed in the vehicle when ordered, or may be purchased separately.) Replacement UIM's are available through the dealership.

-The UIM Read Me first

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42889&docbase=edmsna1>)



2 of 4

-UIM project examples file

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42b3a&docbase=edmsna1>)

- UIM Project Editor User Manual

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42887&docbase=edmsna1>)

- UIM Owner's Manual

(<https://www.lom.ford.com/launchomatic/launch/view.jsp?chronicleId=0900cad982b42888&docbase=edmsna1>)

- Windows based UIM Project Editor software

(see Downloading Software) (<http://www.fleet.ford.com/login/>)

- The UIM 16-way harnesses 9 (two blunt cut 3' harnesses with connectors). Replacement harnesses are available through the dealership.

- A standard Type B Universal Serial Bus (USB) 2.0 cable (not included- must be provided by the upfitter)



**Left:** UIM as mounted in the 2017MY Super Duty, and interface cables (included) and USB cable (Not included)

**Right:** UIM connectors

#### Downloading Software from the Ford Fleet website:

The Windows based UIM project editor software is available through the Ford Fleet website (<http://www.fleet.ford.com/login/>). Existing Ford Fleet website users may use their current login. New users should follow the instructions listed on "creating an account" via the link provided. If you have questions or need further assistance with the Ford Fleet Website, contact the Ford Fleet Customer Information Center at:

1-800-34-FLEET (1-800-343-5338).

Monday-Friday 8:30 AM-5 PM EST

Or

Contact Ford Fleet via email (<http://www.fleet.ford.com/contact-us/customer-information-center/email-us/>)

**Note:** Ford Motor Company is not responsible for debugging or verifying the function of the customer created UIM program files. It is the responsibility of the upfitter to ensure proper function of the software created to complete their upfit.

3 of 4

**UIM signals:**

The UIM receives 28 high speed CAN "read only" signals from various vehicle systems, providing upfitter access for aftermarket equipment needs. In addition, the upfitter may provide up to 9 additional inputs. These messages and inputs may be selected by the upfitter in the Project Editor to program the UIM outputs for aftermarket equipment. Note that the UIM has no interaction with vehicle feature functions (with the exception of horn chirp). It is strictly designed to provide outputs for aftermarket equipment.

The UIM provides the following:

- 9 configurable inputs (active low or active high), (blunt cut pigtail connector\*)
- 7 Low side driver output pins (blunt cut pigtail connector\*)
- 8 High side driver output pins (blunt cut pigtail connector\*)
- 25-30 HSCAN signals (descriptive names in the Project Editor)
- \*Pigtails with 3 foot jumpers are provided for I/O's to connect to aftermarket devices.

Note: The UIM provides output signals only, and not intended to directly power any aftermarket device. Customer must use external relays to drive any equipment.

The following are some of the high speed CAN messages available in to the UIM. See the UIM Project Editor's manual for more information.

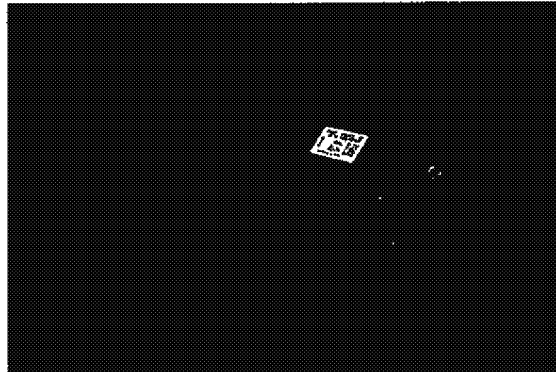
Message	Message
Engine Coolant Temp	Rear Left Door Status
Engine Status	Rear Right Door Status
Outside Air Temp	Driver Door Status
A/C Compressor Clutch Status	Hood Status
Cruise Control Mode Status	Tire Pressure Monitoring System Status
Vehicle Speed	Air Conditioning (A/C) Request
Engine Speed (RPM)	Driver Seat Buckle Status
Transmission Oil Temp	Passenger Seat Buckle Status
Automatic Transmission Gear Status	Restraints Indicator Lamp (RIL) Status
Door Lock Status	Crash Event Severity
Ignition Status	Oil Pressure Lamp Status
Crash Event Status	Malfunction Indicator Lamp (MIL) Status
Passenger Door Status	Vehicle Battery Voltage
Odometer Reading	Fuel Level

4 of 4

**2017 MY Super Duty UIM location:**

The UIM will be available as an orderable option (order code 18A) on the 2017 MY Super Duty. The module is located in the interior of the vehicle on the passenger side behind and below the Lower the glove compartment. To access the UIM:

1. Release the retainers and remove the insulation panel.



## Ford Upfitter Interface Module (UIM)

The Upfitter Interface Module (UIM) is an optional factory installed device that has the ability to manage equipment via customer provided inputs and vehicle Controller Area Network (CAN) data signals.

Upfitter Interface Module (UIM) Hero Card





# Ford General Body Builder Layout Book





## Table of Contents

Introduction .....	4
Reference Information .....	4
Definitions .....	5
Terminology .....	5
VIN Coding Information .....	7
New Vehicle and Long Term Storage Guidelines .....	8
Design Recommendations .....	9
Second Unit Body Structures and Mounting .....	9
Body Components .....	9
Attaching Accessories to Aluminum Panels and Structure .....	9
Attaching Accessories to Magnesium Structure .....	10
Headlight Alignment.....	10
Heat Management .....	11
Fuel System.....	12
Fuel Tanks.....	12
Fuel Tank Retention Systems.....	12
Fuel Fill System .....	12
Fuel Lines, Hoses and Pumps.....	13
Fuel System Access for Auxiliary Fuel Powered Equipment .....	14
Electrical System .....	15
General Practices .....	15
Accessing Power .....	15
Key Off Loads .....	16
Battery Relocation .....	16
Auxiliary Batteries vs. Multiple Batteries .....	16
Fusing and Circuit Protection.....	16
Electrical Wiring - General .....	16
Electrical Wiring - Wire Gage.....	17
Electrical Wiring - Routing & Retention.....	17
Electrical Wiring - Splice / Repair.....	18



Lighting.....	18
Upfitter Interface Module (UIM) .....	20
Cooling System.....	24
Climate Control System .....	24
Exhaust System.....	25
Wheels and Tires.....	26
Tire Pressure Monitoring System (TPMS) .....	26
Brake System .....	26
Suspension and Steering System.....	28
Engine .....	28
Transmission .....	29
Driveline.....	29
Driveline Balance, Runout and Sizing.....	29
Driveline Angles.....	30
Frame .....	32
Wheelbase Modifications.....	32
Aft of Axle Frame Extension .....	35
Ground Clearance .....	36
Occupant Protection Systems.....	37
Seat Systems .....	37
Lap and Shoulder Belt Systems .....	37
Occupant Protection Zone and Overhead Console .....	38
Air Bag Supplemental Restraints System (SRS) .....	38
Center of Gravity Location .....	39
Definitions .....	39
Calculating Center of Gravity Location .....	40
Change Control.....	41



## Introduction

The information described herein is believed to be correct at the time of publication, but accuracy cannot be guaranteed. Ford reserves the right to discontinue models or change specifications or designs at any time without notice and without incurring any obligation.

Representations regarding the compliance of any Ford-manufactured incomplete vehicle to any rule, regulation or standard issued pursuant to the National Traffic and Motor Vehicle Safety Act or the Canadian Motor Vehicle Safety Act are set forth only in the Incomplete Vehicle Manual (IVM) which accompanies each incomplete vehicle.

Regulations such as those issued by the Federal Highway Administration (FHA) or issued pursuant to the Occupational Safety and Health Act (OSHA), and/or state, provincial, and local laws and regulations may require installation of additional equipment for the particular use intended for the vehicle. It is the responsibility of the subsequent stage manufacturer or completed vehicle alterer and the vehicle purchaser to ascertain how the vehicle will ultimately be used, if FHA, OSHA or state provincial or local regulations apply and how the vehicle, as completed, will comply with those requirements. Nothing contained herein is to be construed as a representation that such equipment required for the particular use intended has been installed on the completed or incomplete vehicle.

## Reference Information

### Ford Body Builder Advisory Service Publications

In addition to this General Body Builder Layout Book (BBLB), there are several other Ford BBLB documents that contain general best practices or information on specific subjects that span multiple vehicle lines. These include:

- Snow Plow BBLB
- Pickup Box Removal BBLB

In addition to the BBLBs listed above, each Ford Commercial Truck vehicle line has a program-specific Body Builders Layout Book that aims to provide detailed information which may be of interest to a subsequent-stage manufacturer or alterer.

The Ford Transit and Transit Connect also have a Body and Equipment Mounting Manual (BEMM), which is a comprehensive resource dedicated to body and equipment mounting information.

Yet another source of program-specific information are the "Vehicle Specification" documents available on the Ford BBAS website. Information typically found in these documents are: vehicle curb and accessory weights, vehicle dimensions, component descriptions, capacities, GAWRs, alternator output, powertrain output and gear ratios.

For reference, Incomplete Vehicle Manuals (IVM) for applicable Ford commercial vehicles are also provided on the Ford BBAS website.

These publications are updated every model year and can be accessed via the web at <https://fordbbas.com> under "Publications". For BBLB and BEMM documents, expand the "Body Builder Layout Book" Section to view all available documents. For Vehicle Specifications, expand the "Vehicle Specifications" section. For IVMs, expand the "Incomplete Vehicle Manuals" section. The website search function can be used to filter for specific content or vehicle line.

### Ford Body Builder Advisory Service Bulletins

Occasionally, the Ford BBAS team will create an SVE "Bulletin" to address a specific issue or distribute important information in a timely manner. These documents can be accessed via the web at <https://fordbbas.com> under "Bulletins". The website search function can be used to filter for specific content or vehicle line.

If applicable, information from each SVE bulletin will be incorporated into the appropriate BBLB document the following model year. In some cases, SVE bulletins will continue to be referenced in this document.

### Ford Body Builder Advisory Service Contact

The Ford Truck Body Builder Advisory Service may be consulted if questions regarding the completion of Ford commercial vehicles are not adequately addressed in the documentation described above. For assistance call (877) 840-4338 or e-mail via the web at <https://fordbbas.com> under "Contact Us" and select "General Questions".

For Ford vehicle CAD requests, please visit <https://fordbbas.com>, select "Contact Us" and then "CAD Request".

For both Questions and CAD Requests, please be as specific as possible with the request details to assure the most accurate and timely response.

### Ford Service Publications

Ford Service Technical Resources (including wiring diagrams, repair manuals and diagnostic tool support) are available by subscription via the Motorcraft website: [www.motorcraftservice.com](http://www.motorcraftservice.com)

The following publications are examples of digital and printed manuals which are available from Helm Incorporated; call 1-800-782-4356 or contact Helm, Inc. at their website [www.helminc.com](http://www.helminc.com):

- Ford Shop Manuals
- Ford Towing Manuals
- Ford Wiring Diagrams

